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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,086	07/30/2001	Roger David Benning	17-14-14-8	2080

7590

02/09/2005

Docket Administrator (Room 3J-219)  
Lucent Technologies Inc.  
101 Crawfords Corner Road  
Holmdel, NJ 07733-3030

EXAMINER
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UBILES, MARIE C

ART UNIT	PAPER NUMBER
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2642

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/918,086	BENNING ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Marie C. Ubiles	2642	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 July 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9/25/01</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. In the related application (page 1), the U.S. Application Serial numbers should be provided. The co-pending U.S. Application Serial numbers are : 09/918,391, 09/918,392 and 09/918,393.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1 and 14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 7, 13 and 19 of co-pending Application No. 09/918,392.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1 and 14 of the instant application merely broadens the scope of the claims 1, 7, 13 and 19 of the co-pending Application No. '392 by eliminating the elements and their functions of claims 1, 7, 13 and 19 of application '392.

Art Unit: 2642

It has been held that the omission an element and its function is an obvious expedient if the remaining elements perform the same function as before. In re Kadson, 136 USPQ 184 (CCPA). Also note Ex parte Rainut 168 USPQ 375 (Bd.App.1969); omission of a reference element whose function is not needed would be obvious to one skilled in the art.

Regarding claims 1 and 14 of the instant application, the limitation of phase sweeping s1(b) and s1(a) using different –or a second- phase sweep signal is recited in claims 1, 7, 13 and 19 of co-pending U.S. application '392.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 14 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Gutierrez et al. (*IEEE, An Introduction to PSTN for IS-95 and cdma 2000*).

As for claim 14, Gutierrez et al. discloses splitting a signal s(1) into signals s(1a) and s(1b) (i.e. "the signal is split into two paths")(See "Splitter" in Fig. 1 and Page 1358, Col. 2, lines 10-11), wherein the signal s(1) includes a communication signal (as read on "baseband signal"); phase sweeping the signal s(1a) using a first phase sweep frequency signal (or  $e^{-j2\pi f t}$ ) to produce a phase swept signal s(1a); and phase sweeping the signal s(1b) using a second

Art Unit: 2642

phase sweep frequency signal (or  $e^{-j2\pi fct + \theta(s)(t)}$ ) to produce a phase swept signal  $s(1b)$ , wherein the phase swept signal  $s(1a)$  has a different phase from the phase swept signal  $s(1b)$ . (See Page 1358, Col. 2, lines 12-16).

As for claims 23, Gutierrez et al. discloses, amplifying the phase swept signals  $s(1a)$  and  $s(1b)$  (See Page 1358, Col. 2, lines 16-18).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2642

7. Claims 1-13 and 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gutierrez et al. (*IEEE, An Introduction to PSTN for IS-95 and cdma 2000*) in view of Dent (US 5,584,057).

As for claim 1, Gutierrez et al. discloses splitting a signal  $s(1)$  into signals  $s(1a)$  and  $s(1b)$  (i.e. "the signal is split into two paths") (See "Splitter" in Fig. 1 and Page 1358, Col. 2, lines 10-11); phase sweeping the signal  $s(1a)$  using a first phase sweep frequency signal (or  $e^{-j2\pi f_{\text{fct}}}$ ) to produce a phase swept signal  $s(1a)$ ; and phase sweeping the signal  $s(1b)$  using a second phase sweep frequency signal (or  $e^{-j2\pi f_{\text{fct}} + \theta(s)(t)}$ ) to produce a phase swept signal  $s(1b)$ , wherein the phase swept signal  $s(1a)$  has a different phase from the phase swept signal  $s(1b)$ . (See Page 1358, Col. 2, lines 12-16).

It can be seen that Gutierrez system lacks the limitation "wherein the signal  $s_1$  is split unevenly such that the signal  $s(1a)$  has an associated power level greater than a power level associated with the signal  $s(1b)$ "

Dent teaches "Since mobile stations in CDMA systems can transmit on the same frequency at the same time signals received at the base station having relatively high signal strengths tend to interfere with those having lower signal strengths. [...] Greatest capacity in CDMA systems can be obtained when the power used to transmit to a mobile station on the downlink is tailored according to the distance from the mobile station to the center of the cell since this will reduce interference. Higher power is transmitted to mobile stations further away while lower power is transmitted to those mobile station near the cell center. The consequence of this technique, called power tapering, is that weaker signals

Art Unit: 2642

will be more sensitive to interference from energy in the adjacent channels than will be the stronger channels.” (See Col. 1, lines 46-50 and Col. 2, lines 5-13).

In regards to the teachings of Den, first, his system teaches that it is common for CDMA systems to transmit at different power levels based on the distance of the mobile station to the base station; thus it would have been obvious to one of ordinary skill splitting a transmission signal at the base station in power levels necessary to comply with power tapering technique. Secondly, Dent's system identify as a problem the interference caused by relatively high strength signals to which the lower strength signals are subjected when both signals are transmitted over the same frequency at the same time.

Based on the teachings of Dent, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to solve the problem identified by Dent by phase sweeping the split signals with different frequencies, as disclosed by Gutierrez' system and thus in this manner decrease the possibility of interference between higher and lower strength signals.

Regarding claims 2-11 and 15-22, the Examiner believes the claimed limitations are non critical to the invention, and that may read, for example, on PSTD (or Phase Sweeping Transmission Diversity), wherein each antenna (i.e. diversity antennas) radiates the same signal but the phase of the one antenna is phase swept relative to the other antenna (See Gutierrez, page 1358, Col. 1, lines 22-28).

Art Unit: 2642

Further, as admitted by Applicant, PSTD is a technique employed in order to improve system performance.

As for claims 12-13, Gutierrez et al. discloses, amplifying the phase swept signals s(1a) and s(1b) and transmitting the phase swept signals s(1a) and s(1b) over a pair of diversity antennas. (See Page 1358, Col. 2, lines 16-18).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dabak (US 6,594,473) teaches a transmitter having multiple transmit antennas and SSTD encoders.

Ylitalo et al. (US 6,788,661) teaches an adaptive beam time coding method and apparatus.

Chheda et al. (US 6,704,370) teaches an encoder, interleaver and splitter design for increasing system capacity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie C. Ubiles whose telephone number is (703) 305-0684. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (703) 305-4731. The




Art Unit: 2642

fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marie C. Ubiles  
February 5, 2005.

  
JACK CHIANG  
PRIMARY EXAMINER